

## Infall Motions Around Massive Star Forming Regions

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Radio interferometers provide high spatial resolution and kinematic information on the dynamics of massive and dense cloud cores. These sites of high mass star formation often show gravitationally bound motions on a large scale, i.e. rotation and, more controversially, in fall. Evidence for infall comes from optically thick tracers of dense gas such as  $\text{NH}_3$  and  $\text{HCO}^+$  which sometimes show deep red-shifted absorption towards young HII regions. Various authors have interpreted the red-shifted absorption towards G10.6-O.4, W49, W51, G5.8-0.3, and several other sources as due to the gravitational collapse of the massive cloud core.

I will review the kinematic signature expected from cloud collapse and discuss why infall motions are difficult to detect. The influence of the kinematics by other dynamical processes such as molecular outflows and rotation will be explored. Finally the case for infall will be discussed in detail for several objects.